Our blueprint for addressing nature

Global direct real estate approach to assessing our impact on nature

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abrdn.com

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Executive summary

In this document, we set out abrdn's direct Real Estate approach to creating a more positive nature impact.

What is Nature?

Nature and its resilience are central to all activity and life on earth. Nature has been defined as the "natural world, with an emphasis on the diversity of living organisms (including people) and their interactions among themselves and with their environment". Our economies are embedded within nature, not external to it.

Drivers for considering nature

- **Nature in crisis:** Stocks of nature and their respective levels of biodiversity are in dangerous decline. Investors and businesses must take action to reverse this and manage their nature related risks.
- **Climate nature-nexus:** Ecological collapse and climate change are intrinsically interlinked and mutually reinforcing and thus approaching the two together can help solve both crises.
- **Policy drivers:** A range of nature standards, frameworks, regulations, directives, and taxonomies have been established nationally and internationally which are expected to be enforced over time making consideration of nature impacts mandatory.
- **Opportunities for real estate:** The incorporation of green infrastructure (GI) or nature- based solutions (NbS) within the built environment delivers a wide range of ecosystem services that can help assets mitigate and adapt to climate change, provide more attractive and comfortable spaces for tenants and deliver local enhanced biodiversity and wider ecosystem services such as improved air quality and noise reduction.

Our real estate approach to nature

Real Estate is a sector with large contributions to pollution and ecosystem damage but it can work to reduce these negative impacts and go even further to positively enhance nature through appropriate management and development of assets. At abrdn, we have identified three core areas where we can create a positive nature impact alongside the improved reporting of nature metrics and KPIs.

On-site action

Enhance local habitats at existing real estate sites

Material selection

Set best practice for materials and value chain in construction and refurbishment

Tenant activity

Engage with tenants to consider nature in their value chains and own activities

Conclusion

Nature not only needs better protecting but also restoring and enhancing. Globally, the real estate industry can play a critical role in achieving this by considering the impacts we have on nature, both directly and indirectly, and the opportunities that are available to positively enhance nature, both at our properties and through value-chain activities.

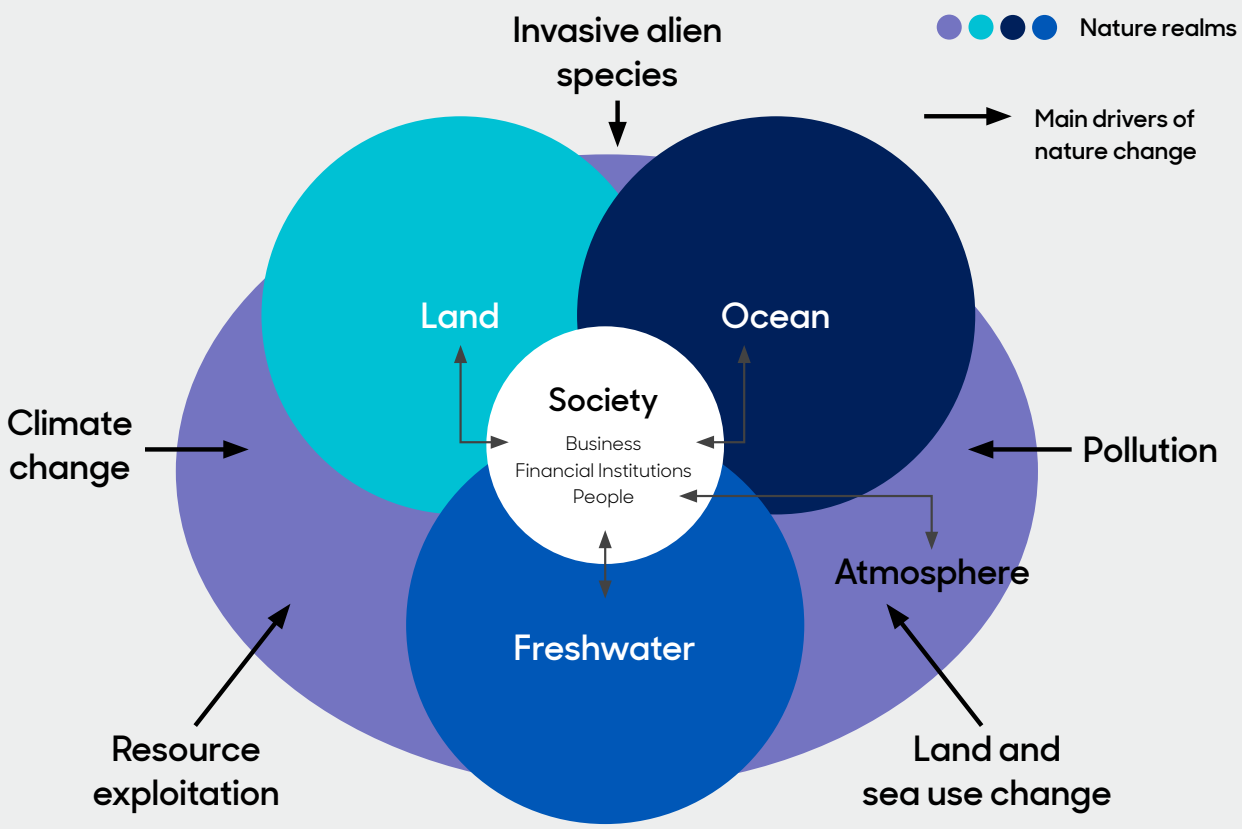
What is nature?

Nature has been defined as the "natural world, with an emphasis on the diversity of living organisms (including people) and their interactions among themselves and with their environment".[1] More recently, nature has been framed as the construct of four core realms: land, ocean, freshwater, and atmosphere (Figure 1.1).[2]

A web of ecosystems exist within these realms, defined as "a dynamic complex of plant, animal and micro-organism communities, and the non-living environment interacting as a functional unit".[3]

The balance of species in an ecosystem depends on the natural features of the environment, such as the nutrient status, climatic conditions, water and light, as well as the relationship with other organisms including predators and agents of disease.[4]

Figure 1.1: Four realms of nature



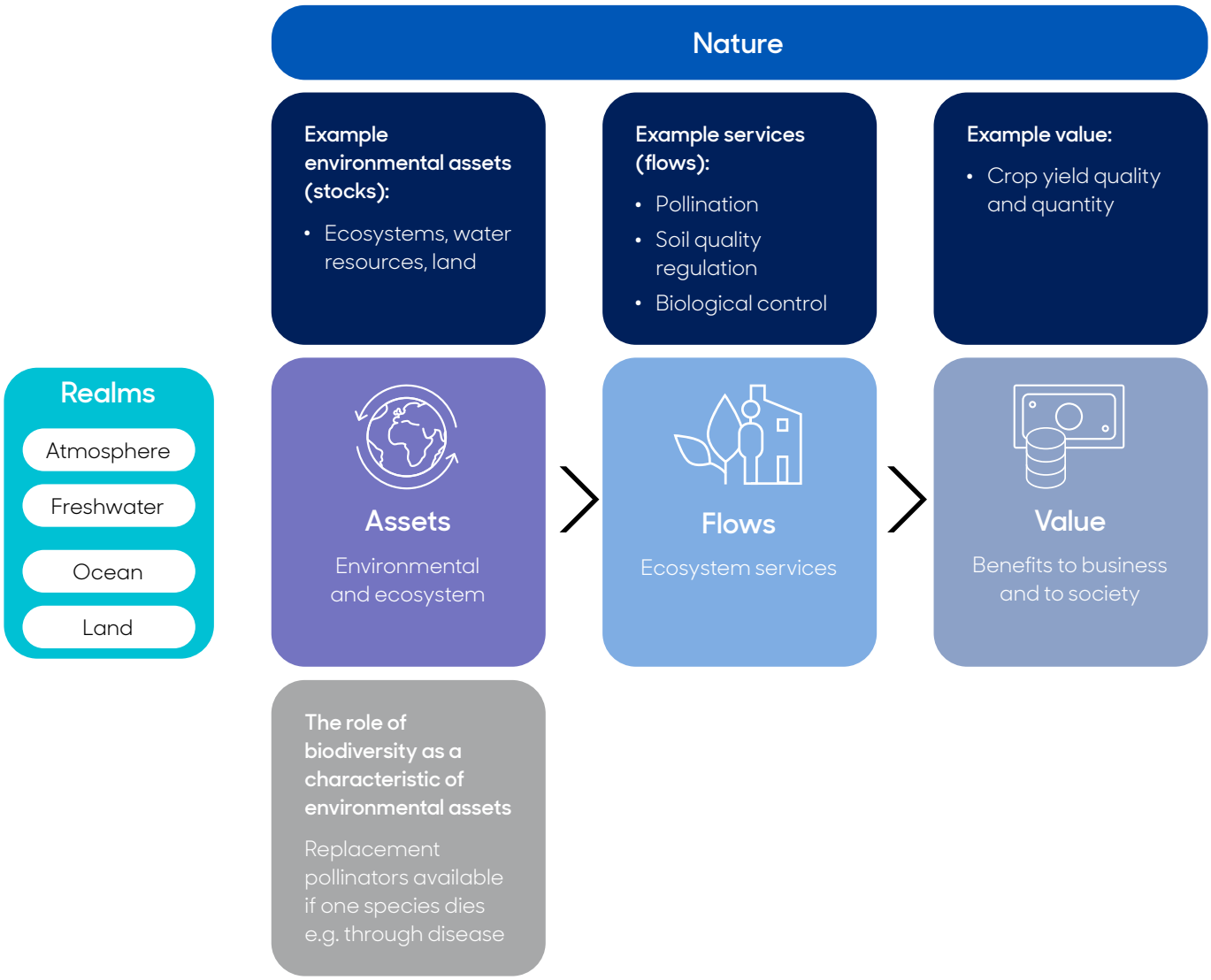
Source: abrdn adapted from TNFD and IPBES.

Biodiversity is the "variability among living organisms from all sources including, interalia, terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are a part".[5] The stock of both renewable and non-renewable natural assets/resources (e.g. plants, animals, air, water, soil, minerals) is therefore referred to as natural capital, which yield a flow of benefits or ecosystem services to society (Figure 1.2).[6]

Biodiversity underpins functioning ecosystems, which in turn provide flows of goods and services that support a functioning society (Figure 1.2). Our economies are therefore embedded within nature, not external to it.[7] But few, if any, business operations and value chains have internalised this externality and nature continues to be degraded at unprecedented scales.

Our wider approach to preserving natural capital for our investments is available **here**.

Figure 1.2: Building blocks for understanding nature[2]



Drivers for considering nature

Nature in crisis

Stocks of nature and their respective levels of biodiversity are in precipitous decline.[8] Over one million species are threatened with extinction,[9] seas are overexploited and polluted,[10] and land is being degraded to such an extent that its biological functionality is deteriorating.[11] The rate of global decline in biodiversity is therefore one of the greatest threats facing humankind. At present:

- We are operating outside the safe zones for six of the nine planetary boundaries[12] – processes that are critical for maintaining the Earth's stability;
- We are experiencing a "sixth mass extinction event",[13] the last of which saw the end of the dinosaurs;
- One million animal and plant species, or 25% of all known animal and plant species, face extinction[14] – a rate that is 1000 times higher than the expected background rate without human intervention;
- The Living Planet Index – which measures almost 21,000 populations of mammals, birds, fish, reptiles and amphibians around the world – has shown an alarming average drop of 69% between 1970 and 2018.[15]

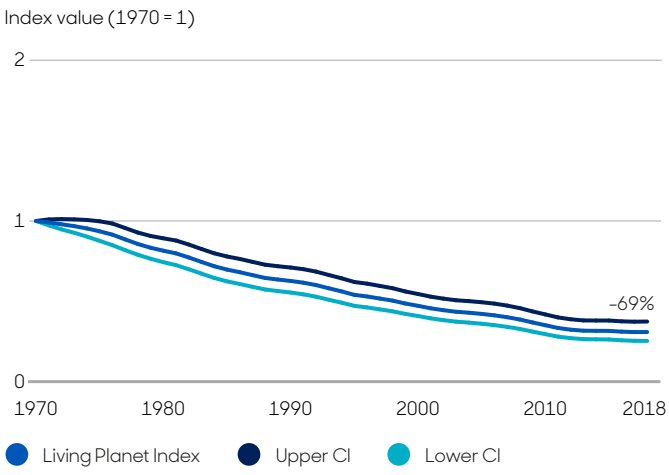
The World Economic Forum's (WEF's) Global Risks Report 2023 reflects the severity of these threats, with 50% short-term risks and 60% of long-term risks relating to nature (Figure 2.1).[16]

Figure 2.1: Global risks ranked by severity over the short-and-long term[16]

All these risks have dire financial consequences. More than half of the world's economic output – US$44 trillion of economic value generation – is highly or moderately dependent on nature.[17] Framing economic activity as dependent on nature is "a step away from valuing the damage done in 'cost-to-restore' terms, and a step closer to understanding the risk of biodiversity loss to operational cashflows, asset values and the wider economy."[18]

The WEF recently estimated what percentage of gross value added (GVA) is dependent on nature for a range of industry operations and value chains. When considered alongside the Living Planet Index's reported rate of biodiversity decline, the dependency of industries on nature become increasingly alarming (see Figure 2.2). The WEF research estimates that 100% of the real estate industry's direct GVA and more than 90% of its value chain's GVA have a "medium" dependency on nature.

Figure 2.2: Biodiversity decline and dependency on nature by industry

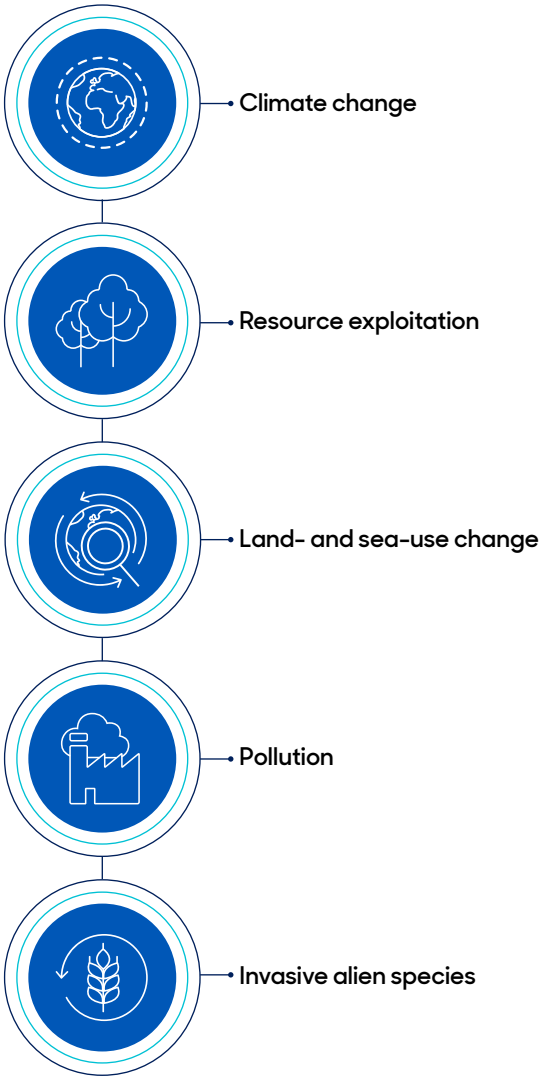


Source: World Wildlife Fund (WWF) and Zoological Society of London (2022) – processed by Our World in Data

While the reliance of the global economy on nature and ecosystem services is clear, the links between real estate practices, nature-negative outcomes, and sub-optimal economic output must be made clearer. Figure 2.3 outlines the five main drivers of nature change and degradation, to which real estate activities and value chains contribute.

The disconnect between cause and effect has enabled industry-led biodiversity degradation to spiral out of control, which also has implications for climate change.

Figure 2.3: Main drivers of nature change



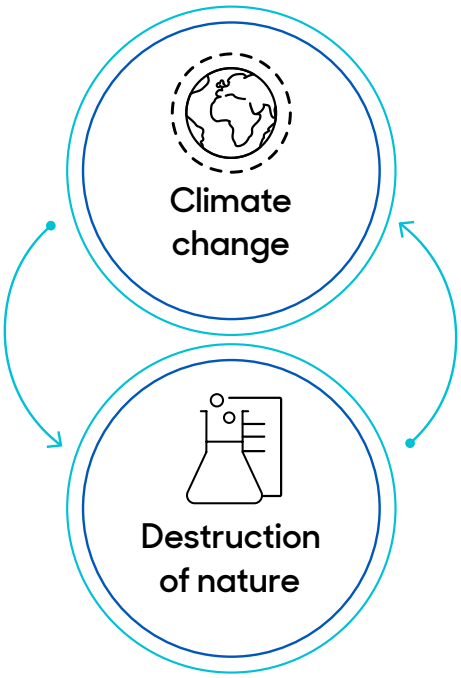
Climate-nature nexus

Ecological collapse and climate change are intrinsically interlinked and mutually reinforcing. Together, they are the twin emergencies facing humanity.[19] Climate change drives biodiversity loss. For example, through its impact on the atmosphere, precipitation and terrain, climate change alters the composition of species that can survive and thrive in a given ecosystem. The delicate interaction in that ecosystem is disrupted, the loss of species is accelerated, and biodiversity loss worsens.

Simultaneously, the degradation of habitats decreases climate resilience. This can cause carbon stored in natural assets to be released into the atmosphere and sequestration capacity to be hindered, which reduces the land's ability to adapt to extreme weather events caused by climate change.

The climate-nature nexus recognises our inability to mitigate, or adapt to, the impacts of climate change without protecting, restoring, and enhancing our global stocks of nature – our natural capital. As such, biodiversity is central to ensuring climate resilience. It must command the same level of consideration within corporate and financial decisions as climate issues.

Figure 2.4: Link between nature loss and climate change

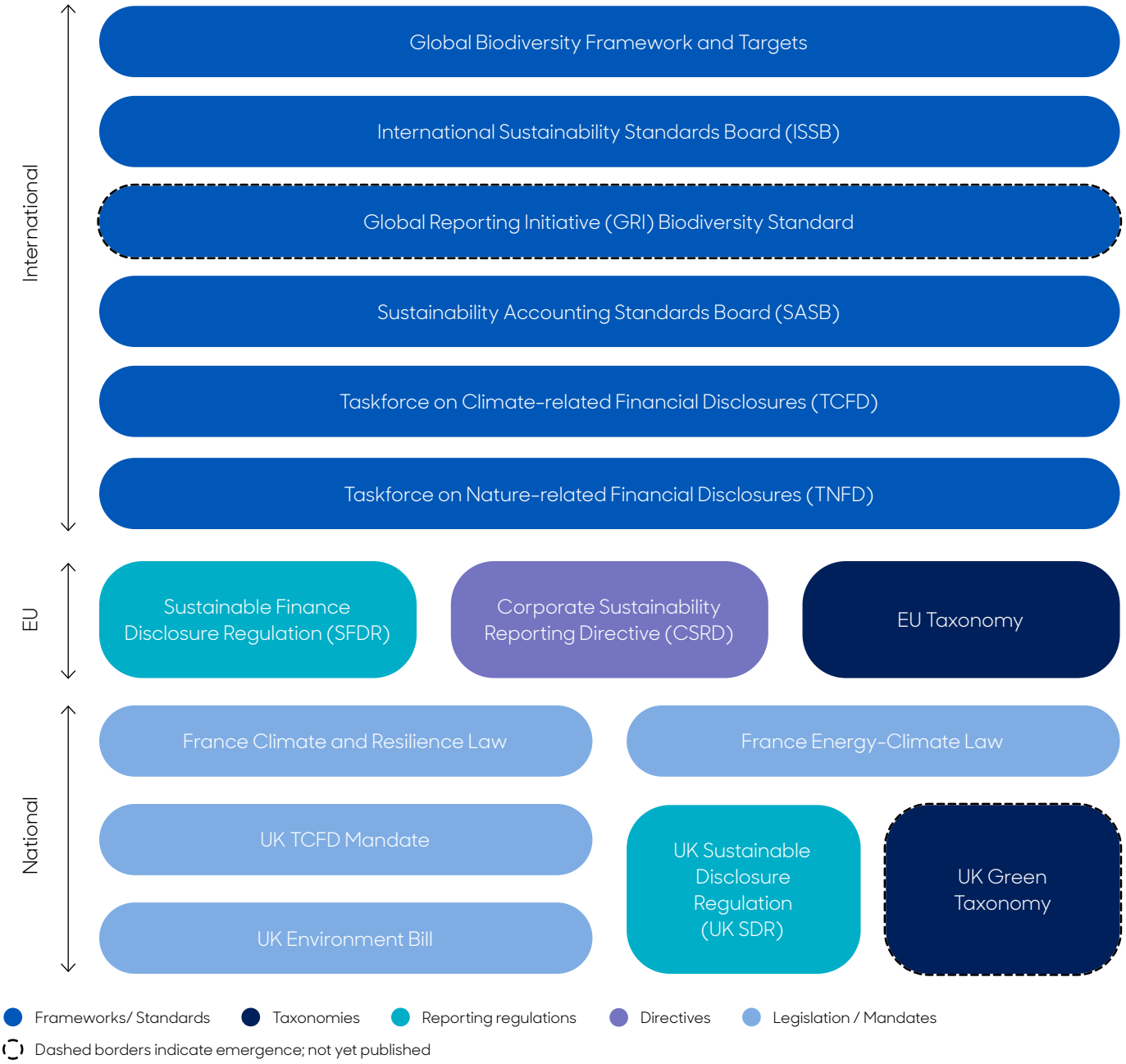


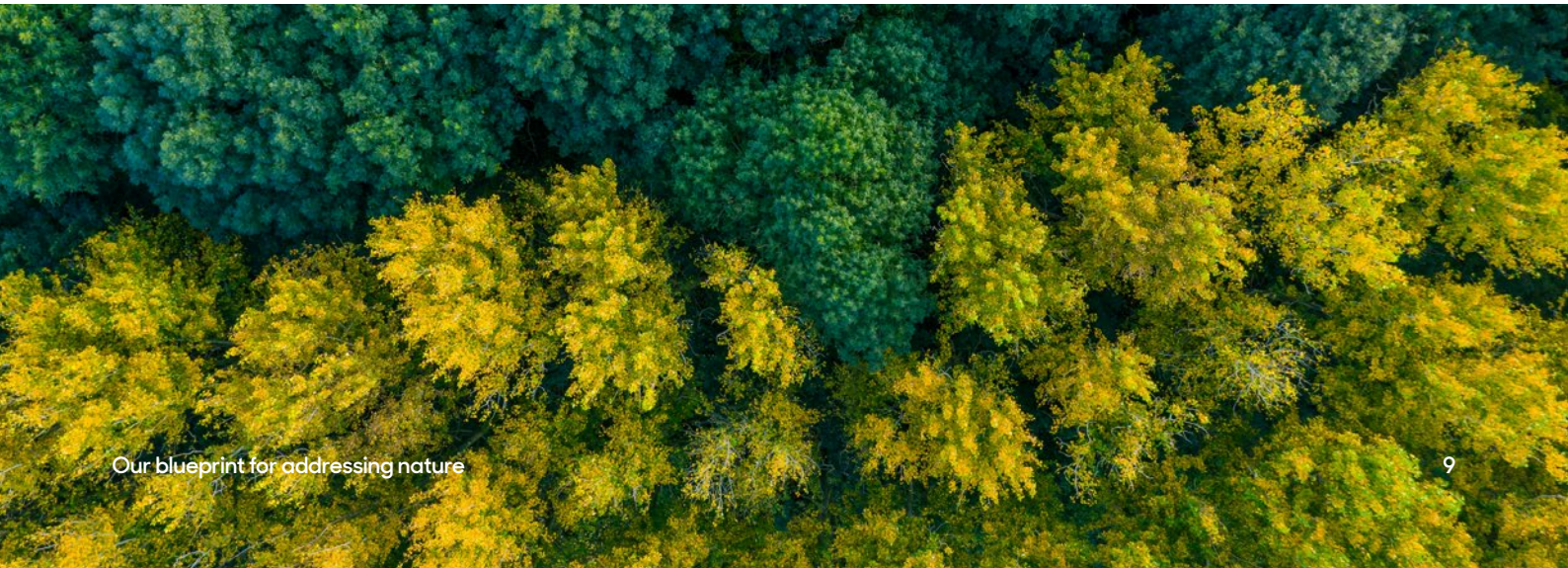
Policy drivers

From a policy and legislative perspective, nature (and specifically biodiversity) is being increasingly considered and with newfound weight. A range of standards, frameworks, regulations, directives and taxonomies have been established nationally and internationally. These compel, support and guide organisations in reporting on sustainability-linked issues (Figure 2.5). Ultimately, these initiatives, both existing and emerging, will have implications for the ways in which global corporates frame and interact with nature in their own activities and across their value chains.

Regulations like the EU Sustainable Finance Disclosure Regulation (SFDR) act as binding legislation for all EU member states. Nation-specific legislation and mandates – such as those found in the Energy Climate Law or Environment Bill – are also legally binding, enshrined by acts of parliament or congress.[20] Frameworks and standards establish technical detail and can be used to inform legislation and policy, or be mandated within it, just as the Task Force on Climate-related Financial Disclosures (TCFD) has been in the UK. Directives are legislative acts that set goals and objectives (i.e. the Corporate Sustainability Reporting Directive (CSRD)), but they must be ratified before they become binding. Taxonomies then work to support the above, providing guidance and assurance for various aspects of disclosure regulations or standards. These include reporting requirements, green bond issuances, greenwashing and transition plans.[21] Further detail on the regulatory landscape outlined in Figure 2.5 is provided in Appendix A.

Figure 2.5: Regulatory landscape





Opportunities for real estate

While risk and regulation are driving a greater consideration for nature, it is important to consider the potential opportunities that nature brings to real estate. The incorporation of green infrastructure (GI) or nature-based solutions (NbS) within the built environment, delivers a wide range of ecosystem services that can help assets:

- Mitigate and adapt to climate risks such as flooding and overheating improving their long-term climate resilience.
- Provide more comfortable and attractive spaces to users/tenants.
- Protect and enhance their value in perpetuity.
- Deliver measurable benefits to biodiversity and connect wider habitat networks.

In addition, analysis of prices paid by investors for office property in London and Paris has identified a growing premium for assets with sustainability ratings (such as BREEAM, LEED), versus those without.[22] While such ratings are assessed across a wide remit of sustainability factors, nature and biodiversity form an integral part of the certifications.

Efforts to further bolster the business case for nature in real estate have increasingly quantified and monetised the benefits of GI/NbS to investors. Figure 2.6 outlines the headline findings of research into the benefits provided by three urban NbS and demonstrates the advantages over conventional grey infrastructure.[23] Better data can inform better decisions, which can deliver win-win scenarios for biodiversity and businesses.

For example, a hypothetical site with identified flood risk requires retrofitting to protect and enhance asset value in the long term. When weighing up options, investors can increasingly draw on NbS performance data to inform their decisions.

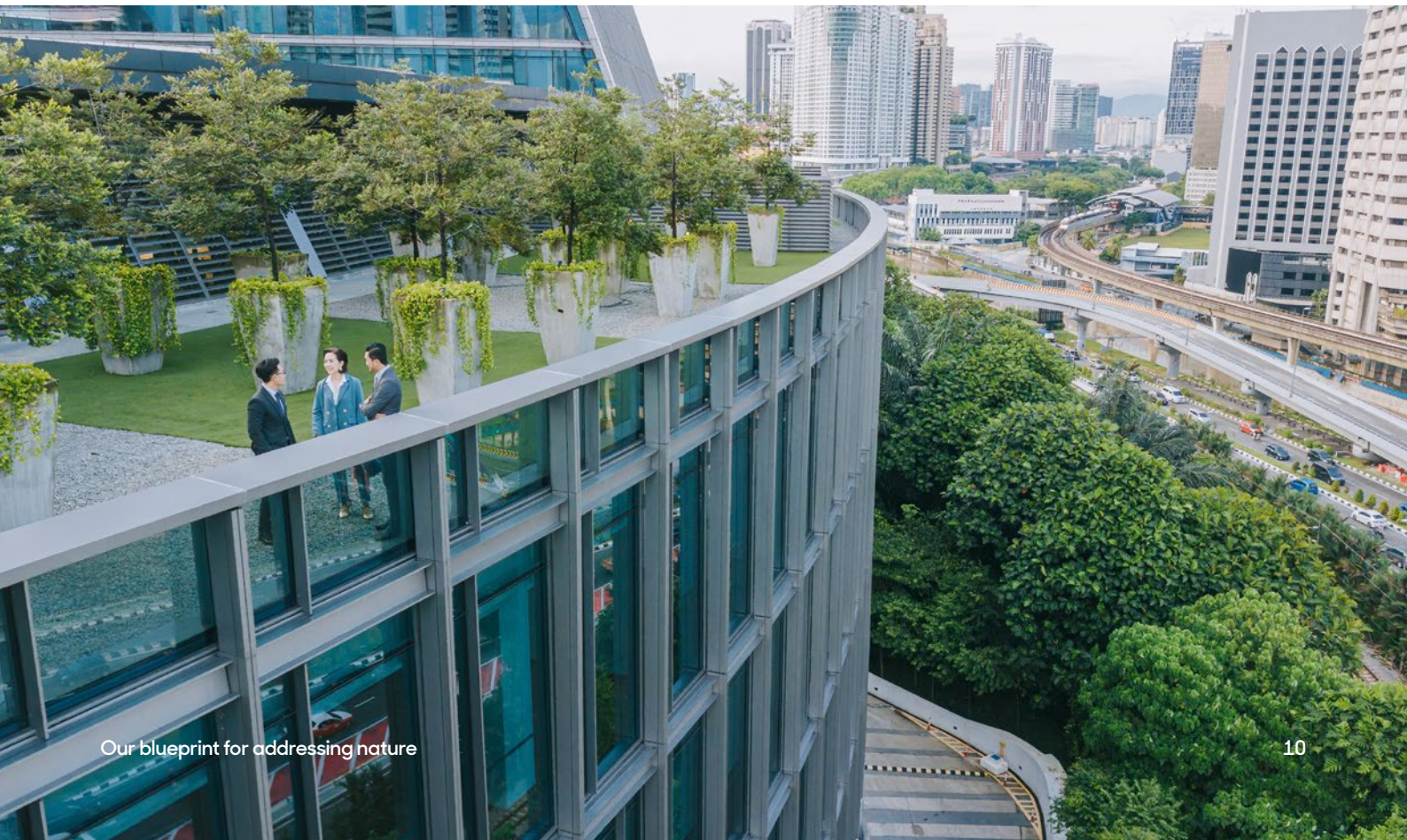


Figure 2.6 The benefits of urban NbS[i]

Sustainable drainage system (SuDS)

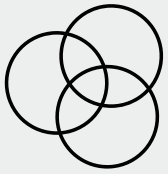
The management of surface water runoff within the urban environment to mimic the natural drainage processes, while supporting broader biodiversity and amenity aims.

Additional benefits compared to conventional drainage system:

- Biodiversity enhancement
- Air quality improvement
- Community benefit and amenity
- Temperature regulation Carbon storage & sequestration
- Increased land and property value

60-72%

Rainwater runoff retained



79%

Total suspended solids removed in filter strip/ swale SuDS system

60-80%

Similarity in species richness to a natural pond

Common alternative terms: Drainage systems, natural drainage systems, Water Sensitive Urban Design (WSUD).

Green roof

Vegetation growing on any structure's horizontal surface.

6.7%

Total energy savings for the space directly below the green roof

6.9%

Uplift to property value by an accessible green roof

Green wall

Vegetation growing on or against a vertical surface.

8%

Total energy saving for adjacent space

2.7°C

Reduction in indoor temperature from green façade

18-35%

NO_2 removed in street canyons

Common alternative terms: Green facades, bio-responsive/bio reactor façade, living walls, vertical greening system, green screen, hedges.

[i] This Horizon2020-funded research collated thousands of pieces of academic literature and technical reports to provide summarised values to help inform investors' decisions.

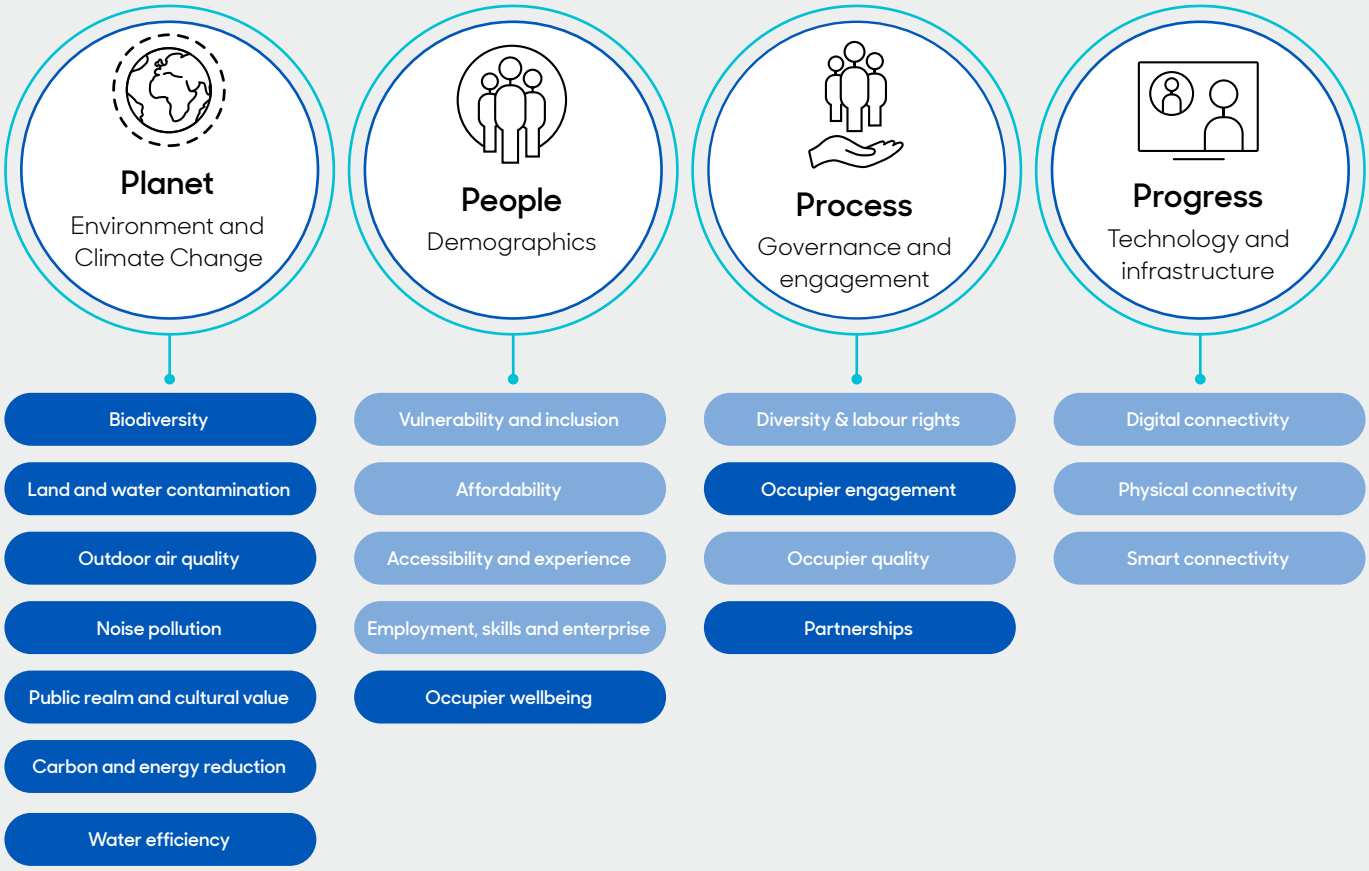
Our approach to nature

Matters related to nature and the natural or semi-natural environment are embedded within abrdn's approach to ESG. Our specific approach to nature in real estate is split between our actions on-site and our actions across our value chain.

At our real estate business level, we have defined a wide range of material ESG indicators centred around four key themes: planet, people, process and progress (see Figure 3.1). Performance against those ESG indicators is assessed at fund and asset level in our investment process.

However, we can always do more and evolve our current approach to the nature-related ESG indicators. This part of the paper highlights how we consider nature as part of our current approach and how we can evolve this over time to enable better measuring and reporting. The overall aim is to have a positive impact on nature.

Figure 3.1: Our material ESG indicators for real estate[ii]



[ii] Highlighted indicators reflect those that are explicitly related to nature, either via biodiversity value or ecosystem service provision.

As asset managers, we have identified three core areas within which we can have a positive impact on nature through our real estate operations and influence. (Figure 3.2).

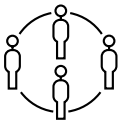
Figure 3.2: How we affect nature within real estate

On-site action

Enhance local habitats at existing real estate sites

Material selection

Set best practice for materials and value chain in construction and refurbishment



Tenant activity

Engage with tenants to consider nature in their value chains and own activities

Our impact areas relate to on-site or value-chain actions. However, our agency or capacity as an asset manager to enact change across sites or suppliers varies. This can be framed as those factors that we can control or those that we may positively influence (Table 3.1).

Table 3.1: Our control and influence on nature within real estate

	On-site action	Value chain action
Control	For managed real estate assets, we can directly improve and/or introduce nature on-site (e.g. via management practices or deliver NbS).	For managed asset operations, we can consider the nature-related impacts and dependencies associated with our upstream value-chain activities and reduce and/or remove high-impact commodities. For example, a review of abrdn's procurement processes and the assessment and evaluation of high-impact commodities. This includes the construction materials associated with any development/refurbishment activities or food sourced for any on-site catering.
Influence	For single-let assets, we can engage with tenants on the opportunities on-site (e.g. encourage tenants to enhance and/or introduce nature via management practices or deliver NbS).	As part of our downstream value chain, tenants will be encouraged to consider the implications of the TNFD to their businesses. Tenants will be encouraged to consider nature-related impacts, dependencies, risks, and opportunities emerging from their direct operations and value-chain activities. As with our own approach, this could include a review of high-impact commodities. We appreciate that impacts and dependencies will be specific to the precise business type and tenant.

When considering our control or influence over the investment process, it is important that possible nature-related risks and opportunities are identified (Table 3.2). In putting nature more firmly in the forefront of investors' decisions, risks can be identified early, mitigated or adapted. Likewise, we can then plan for, and benefit from, opportunities.

Table 3.2 lists examples of the potential nature-related risks and opportunities that can arise across the asset lifecycle. The risks are then categorised by financial, judicial (i.e. legal), and/or reputational damage. The risks are also categorised by whether they are captured by standard due diligence (i.e. captured or addressed within Phase 1 Habitat Survey or equivalent) or enhanced due diligence referenced as Due Diligence+.

Table 3.2: Nature-related risks and opportunities across the asset lifecycle

Asset lifecycle stage	Potential risks	Type of risk	Potential opportunities
Acquisition	Presence of protected species	Judicial Reputational Due Diligence	Asset has existing green spaces which have already been optimised for tenants and nature
	Presence of invasive species	Judicial Financial Due Diligence	Asset has potential for improving and optimising existing spaces for nature based solutions for tenants and nature
	Land and water contamination	Judicial Financial Reputational Due Diligence	
	Poor condition habitats present	Financial Due Diligence+ Physical	
	No natural habitat features present, retrofit costs associated	Financial Due Diligence+ Physical	
	Low/no potential for nature enhancement/improvement on-site	Due Diligence+ Physical	
	Proximity to area(s) of high biodiversity value	Reputational Due Diligence+	
	Physical risks due to poor quality habitats and ecosystem service failings	Due Diligence+ Physical	

Asset lifecycle stage	Potential risks	Type of risk	Potential opportunities
Asset management	Natural habitat mismanagement	Reputational Due Diligence	Utilisation of space for nature and optimising for local wildlife
	Protected species mismanagement, remedial costs associated	Judicial Reputational Due Diligence	Optimisation of natural spaces for social value (health & wellbeing, user experience, biophilia)
	Invasive species mismanagement, remedial costs associated	Judicial Financial Due Diligence	Optimisation of natural spaces for community food growing projects in residential assets
	Vulnerability to physical climate risks due to lack of natural habitat features (flooding, heat stress)	Financial Due Diligence+ Physical	Using larger spaces for natural capital projects that tap into carbon and biodiversity offset/credit markets. These provide additional revenue streams and a more positive impact from the site
			Using larger roof spaces, e.g. on industrial assets, for hybrid infrastructure such as biosolar roofs (i.e. combined solar PV and green roof)
Development/ refurbishment	Non-compliance with local planning requirements for biodiversity provision, e.g. biodiversity net gain, urban greening factor, green space factor, artificialisation targets (i.e. in line with SFDR (Sustainable Finance Disclosure Regulation) or French legislation), green roof targets (i.e. national and local legislation, for example, in Germany)	Reputational Financial Due Diligence+	Delivering measurable uplifts in biodiversity on-site, e.g. biodiversity units, urban greening factor, area of green infrastructure, number of habitat types and habitat features
	Land and water contamination (moderate-to-high risk not acceptable)	Judicial Financial Reputational Due Diligence	Addressing specific climate physical risks on-site, via tailored nature-based solutions (NbS)
	Future legislation on standards for value chain factors (i.e. material type, origin, use)	Judicial Financial Due Diligence+	Following circular economy principles to provide more sustainable construction materials, minimising impacts on nature and carbon.
	Future requirements for lettings, i.e. volume of/ proximity to green space (e.g. Accessible Greenspace Standard)	Reputational Due Diligence+	Capturing and disclosing all measurable gains within ESG reporting

Understanding nature-related risks and opportunities more clearly and considering them from the outset of the asset lifecycle can help mitigate and adapt to risks. It can also help to capitalise on a range of existing and emerging opportunities.

On-site action

The biggest opportunities for enhancing biodiversity and ecosystem service value across our real estate assets is via on-site actions directly within our control.

Principles for nature improvement

1. **Keep it local:** ensure any NbS match local habitat recovery requirements and that local expertise and resource are used where possible. This includes using native species and linking into local wildlife networks and expertise.
2. **Keep it balanced:** ensure any approach is balanced between optimisation of carbon sequestration, biodiversity, and wider ecosystem services to give the best optimal outcome for nature.
3. **Keep it measured**: ensure continuous assessments to measure and quantify carbon, biodiversity, wider ecosystem services, and societal benefits.
4. **Keep it additional:** for a NbS to be credible, it must also prove additionality, where the activity to create the NbS is distinct from its baseline state.
5. **Keep it people-focused:** for NbS to succeed, they need to work in harmony with people. Active engagement with local stakeholders is vital, allowing the site to be enhanced for wider social requirements and benefits, e.g. better access to nature and educational opportunities.
6. **Keep it transparent**: follow a robust and transparent reporting framework, which is subject to external audit and scrutiny.
7. **Keep it holistic:** if NbS are used for carbon offsetting, they should only be provided to those who can show they are actively reducing the carbon and environmental impact in their own businesses. They also must show they are following the best practice standards for offsetting.

Protecting, managing, and restoring nature on-site

Our approach

As we set out in Table 3.1, our approach will be shaped by what we can control and influence. **Where we have control**, we will categorise properties into low, moderate, or high potential for enhancing biodiversity and ecosystem service value on-site. Measures to deliver potential enhancements are detailed in our supplementary design guide, to be used by site managers to inform actions. **Where we have influence,** we will actively engage with tenants, communicate standards, expectations, and best practice for site management, with training and upskilling to be made available.

We have already begun to improve nature across our sites (see case study below), and we will continue to upscale these efforts. There will also be challenges to improving our nature impact, which are listed in Table 3.3.

Case study Netherlands:
Stranded Illiquid Asset refurbished with nature at the forefront

The Challenge

- Originally constructed 1988
- Floor loadings compromised
- Gas heating
- Obsolescence
- Low biodiversity on site

The Goal

- BREEAM Excellent and Well Silver
- ESG-Led Design
- Best in Class
- Tenant Appeal
- Creation of Liquid Asset
- Nature uplift

The Outcome

- Bat and bird boxes
- Hedgehog and mouse tunnels
- Insect hotels
- Green Wall
- Disassembly design adopted
- Circular steel
- Re-use of 17,200m3 of concrete
- Sustainable materials

- EPC AAA++
- BREEAM Excellent
- WELL Silver- Office and Shed
- All Electric
- PVs – 3,650 Panels
- Potential 1,570 MWh PA generated
- 26 Car & 16 Cycle Chargers
- Sunscreens and Auto Glare Control
- Oudoor Gym

Table 3.3: Challenges to on-site action

Challenge	Detail	Reflections and overcoming challenges
Scale of portfolio	• Over 1,000 properties globally • Around 10,000 tenants	• Categorisation process will help to shape approach and identify priority locations for more immediate and substantial action
Ability to influence	• Extent to which abrdn can successfully and positively influence tenants will vary	• The drivers and formal levers will vary in different countries and regions, which can be utilised to better leverage positive outcomes
Internal pushback	• Nature not yet viewed as a priority, as cannot easily be linked to financial value when compared with carbon or energy	• Fast pace of change in policy, regulatory, and legislative landscape will require increased focus on nature/biodiversity, akin to considerations of net zero
Changing landscape	• Legislation • Approaches	• The need to adapt quickly offers challenges and opportunities. New legislation, approaches, tools and metrics are likely to enhance nature within real estate and across value chains (i.e. emergent TNFD framework and possible future mandates) • Slight revisions to existing strategies and frameworks in light of a changing landscape leave organisations better prepared and with a competitive advantage over those not yet considering nature/biodiversity in a meaningful way (i.e. considering biodiversity baselines/impacts across direct operations would put an organisation months, if not years ahead, of formal TNFD disclosure requirements)
Measurement	• Approaches vary and some tools are geo-specific • Site surveys and traditional species sampling can be time consuming and costly	• As new approaches emerge, new opportunities for measurement become available. The recent advent of eDNA metabarcoding is an example of how new technology and methodologies can provide more accurate and valuable data on species and habitat diversity, with fewer costs and with greater time efficiencies. eDNA is also universal in its application, though its analyses are informed by the quality of a country's ecological records and data (see Table 3.4: Biodiversity Metrics)
Education and social impact	• Biodiverse habitats do not conform to established social norms, and can be considered 'messy' • Need to engage local communities on projects to raise awareness	• There are huge overlaps between the environmental and social agendas of ESG, and opportunities for community interaction epitomise this synergy. Engaging tenants, local residents, local schools or other pillars of local civic infrastructure in awareness-raising initiatives. Activities such as tree planting, pond digging, or bird/bat box design competitions are all potential opportunities to educate and inform, while strengthening those relationships, and delivering wider social value

How will we measure performance?

Building on our existing ESG indicators and internal tools, there are additional biodiversity-linked indicators and metrics to support measurement, assessment, and monitoring of nature-related performance across our sites (Table 3.4). The challenge is to prioritise which metrics to use in which circumstance and it is likely these metrics will evolve over time.

The overarching ambition for all nature and biodiversity-linked indicators is to deliver a net-positive impact (NPI). The precise scope of which will need to be asset-specific, dependent on site type (i.e. type 1 - highest opportunity to type 3 - lowest opportunity) and our level of control or influence.

Table 3.4: On-site biodiversity indicators and metrics

Indicator	Unit	Site-type applicability	Regional applicability	KPI	Comments
Biodiversity net gain (BNG)	Biodiversity Unit / % BNG	Type 1 and 2	All urban sites; and/or specific eco-regions	% BNG (site-specific)	The Defra Biodiversity Metric tool lists "broad habitats" and sub-category "habitat types" to cover all terrestrial and intertidal habitats. Terrestrial (including freshwater) habitats have been classified according to the UK Habitat Classification (UKHab) definitions.[24] Intertidal habitats are defined in the metric according to the European Nature Information System (EUNIS).[25] EUNIS is a comprehensive pan-European system developed to facilitate the harmonised description and collection of data across Europe. It covers all habitat types including natural, artificial and marine (subtidal) environments. The EUNIS habitat classification system is used in reporting across the marine environment in Europe. It is compatible with monitoring data for marine protected areas (MPA). Given the alignment between UKHab and EUNIS classifications, it would be possible to apply the Defra Metric across specific eco-regions, i.e. the UK, northern France and northern Germany. The metric could also be applied with confidence to measure baselines and pre- and post-intervention change on urbanised, developed sites. The underpinning rationale here is that urban, developed sites exhibit similar habitat typologies regardless of their international location. Typically, they comprise developed land, sealed surfaces, buildings, some soft landscaping (such as GI). Since GI is universally applied – and urban GI typologies, such as green roofs, green walls, SuDS, trees are relatively consistent in design – it is deemed appropriate to apply the metric universally on urbanised sites.

Indicator	Unit	Site-type applicability	Regional applicability	KPI	Comments
Biodiversity metrics	Species abundance and/or diversity	Type 1 and 2	International	Increased diversity or numbers of target species	It is possible to set traditional measures of biodiversity as key performance indicators (KPIs). Data on the species present at a specific location can be collected through field survey methodologies that are receptor- and region-specific. Universally applicable measures include eDNA assessment, which increasingly allows for broad spectrum data on biodiversity to be captured and compared spatially or temporally. Furthermore, passive data collection tools such as Agrisound's pollinator monitoring device "Polly", or full-spectrum sound recording devices for bats and birds, can be used to measure changes in biodiversity over time by proxy. Simple binary present/absent measures can also be set where high-priority species are targeted for certain sites.
Urban greening factor (UGF)/ green space factor (GSF)	UGF score	Type 1 and 2	International	UGF score	The GSF was first developed in Northern Europe in the late 1990s and has since been adopted by cities in Europe, Asia, North America and Australia. Scores are calculated using a set of weighted GI surface cover types that include natural and semi-natural vegetation, street trees, hedgerows, sustainable drainage features, green roofs and walls. The area of each surface cover type used in a development scheme is multiplied by the weighting. The sum of these figures, divided by the total site area, provides the overall UGF score for the site. This figure provides a means to measure and compare the functionality of GI design across sites.[26]
Biodiversity intactness index (BII)	Biodiversity intactness (%)	Type 1 and 2	International	% BII	The BII is an estimated percentage of the original number of species and their abundance that remains in any given area, despite human impacts. The Index provides a summary of local biodiversity and can act as an indicator for granular and global biodiversity targets (i.e. GBF). The BII can be used to calculate predictive changes as a result of management decisions, which facilitates scenario analyses.
Area of soft landscaping	% site area	Type 1-3	International	% site area	Area of soft landscaping would comprise the total square metres (and respective percentage of total site area) of all GI on-site. Targets could be set according to site type, e.g. Type 1: 20-40%; Type 2: 10-20%; and Type 3: N/A. Benchmarks for percentage site area of soft landscaping could be established over time, following assessments of Type 1-3 sites.
Area of green roof	m^2	Type 1-3	International	% site area (site-specific)	Measure of green roof on-site, site-specific targets could be set.
Area of green wall	m^2	Type 1-3	International	% site area (site-specific)	Measure of green wall on-site, site-specific targets could be set.
Area of green SuDS	m^2	Type 1-3	International	% site area (site-specific)	Measure of SuDS on-site, site-specific targets could be set.
Trees	Number of trees	Type 1-3	International	Number of trees on-site	Measure of trees on-site, site-specific targets could be set.
Habitat Features	Number of habitat features	Type 1-3	International	Number of habitat features on-site	Measure of habitat features (i.e. bird/bat boxes, invertebrate features such as log piles, insect hotels), site-specific targets could be set.

Invest into wider-scale nature restoration projects

Improving nature on-site, particularly where we have control, is of critical importance. While on-site opportunities for nature improvements may be small-scale, they will support biodiversity locally, enhance the assets for its users/tenants, improve the climate resilience of assets, and will form part of a suite of actions contributing to wider nature networks in respective locations.

In addition to these efforts, we recognise the strategic value of investment into wider-scale nature restoration projects. The scale of the climate and ecological crises necessitates such large-scale activities, and abrdn will look to invest in credible opportunities that deliver tangible benefits for nature and climate.

Case Study:
Natural capital project in the Cairngorms

Example of abrdn NbS investment

'Far Ralia: Native woodland creation and peatland restoration project situated in the Cairngorms National Park owned by the abrdn Property Income Trust. The biodiversity gain from the restoration work was forecast in collaboration with The Natural History Museum using their Biodiversity Intactness Index Tool (BII) and EY.

Base state

1400 ha of open moorland which before acquisition was left untouched but historically used for red grouse shooting and deer stalking with limited grazing

Restorative works

Native woodland creation: 900 ha of woodland, at least 1 million trees

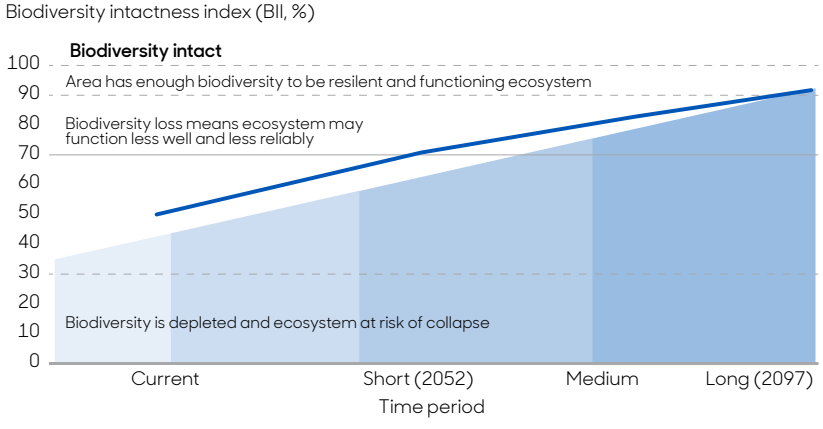
Peatland restoration: Over 150 ha of degraded peatland

Natural regeneration

Benefits for

- **Climate** with 195,000 tonnes of carbon removal up to 2060
- **Society** with enhanced community engagement and access to the site
- **Environment** with biodiversity net-gain

Biodiversity intactless index (%)



abrdn NATURAL HISTORY MUSEUM EY

Value chain action

Considering the implications of Target 15 of the Global Biodiversity Framework and the recommendations of the TNFD, organisations will have to take increasing responsibility for their impacts on nature. This includes both direct impacts (implications of their own operations) as well as indirect impacts (implications of their investments and upstream and downstream value chain). The materiality of nature loss must therefore be increasingly incorporated into decisions. Failing to address nature-related risks can have very real financial implications for an organisation (Table 3.5).

Table 3.5: Transmission channels – from nature-related to financial risks[27]

Transmission channel	Impact	Details
1. Disruption of activities or the value chain	Acute	Disruption could be due to: • Business interruption; • Changing costs; • Changing demand; • Labour market frictions, which for a business would mean an increase in the amount of time to hire suitable workers or the likelihood of losing those workers; • Litigation, resulting in losses or damages; • Productivity changes, e.g. severe heat, pandemic affecting workers; • Property damage. These disruptions would add costs to doing business in the short term.
2. Raw materiality price volatility	Acute / chronic	Refers to fluctuating commodity prices caused by disruptions at the beginning of value chains, or systemic changes in the value chain. Commodity price risk is material: "commodity price swings are the second-largest driver of earnings uncertainty at publicly traded companies."[28] It is also especially relevant to banks offering hedging and trade finance products.
3. Pricing externalities	Chronic	Pricing externalities mean accounting for the economic, social and/or environmental impacts arising from the activities of an entity. Priced externalities can lead to short-term additional cost, hence taking account of externalities to future-proof an organisation, reduces the risk of sudden unexpected cost increases and drives operational efficiencies.
4. Stranded assets	Acute/chronic	Assets that "suffer from unanticipated or premature write-offs, downward revaluations or are converted to liabilities [as a result of] a range of environment-related risks." [29] Work-to-date has predominantly focused on fossil fuel industries, though there are huge implications for real estate assets as a result of physical climate risks (fluvial/coastal flooding and overheating; and transitional risks, i.e. climate-adjusted value.
5. Adjustment or relocation of activities	Chronic	Long-term consequences of adjusting relocation can include: • Changing costs/price shifts; • Changing demand; • Labour market frictions, where the inability to hire or retain appropriate workers forces adjustment; • Litigation, where the business model or operations shift indefinitely as a result of liability risk manifesting; • Productivity changes; • Property damage, such as from an increase in the regularity or severity of extreme weather event. Any adjustment/relocation would also involve capital expenditure to adapt.
6. Capital destruction	Acute	Manifestation and damage incurred by a physical risk, i.e. flooding of ground and basement levels of a commercial asset following a flood event.

Our approach

Our ambition is to minimise negative impacts on nature – direct or indirect. We therefore approach our value-chain action in the same way we have framed our on-site action, by considering what we can control (development/refurbishment impacts) and what we can try to influence (occupier value chain).

Table 3.6: Our approach to value-chain action

Control – development/refurbishment	Considerations
1. Understand what companies we interact with, and what materials we use in the development of our buildings.	Establishing 'interaction maps' of companies we engage with, locations of operations, types of materials and products used, and their provenance.
2. Leverage our ESG research and expertise to evaluate the impacts on nature associated with a) companies engaged, and b) materials used.	Identifying the ecosystems (or wider biomes) that are likely to be affected by development and refurbishment activities. Guidance is emerging on high-impact commodities related to real estate activities and we will review and focus our initial efforts in these areas. Information on product and material type, provenance, and even associated greenhouse gas (GHG) emissions, can be used to assess nature-related impacts.
3. Alter our approach to engage with companies that are addressing biodiversity loss and adopting circular economy principles.	As more information and guidance emerges and our own data develops, new rules of engagement can be produced to ensure we interact with companies that are working to minimise negative impacts on nature through their own activities. Additional investment into NbS projects and/or technologies can also be considered, to support the wider nature-positive transition across industry.
4. Report and track this over time.	Use nature-related indicators and metrics (such as those in Table 3.4) to integrate nature into corporate reporting and monitor progress, feeding into and any mandatory TNFD-aligned disclosures in future.
Influence – occupier value chain	**Considerations**
1. Engage with occupiers to understand their own approaches to nature.	Open lines of communication with occupiers regarding their relationship with nature and potential impacts, dependencies, risks, and opportunities. Key considerations will be what they do, how they do it and where they do it (i.e. location of business activities, and upstream and downstream value chain).
2. Undertake education and awareness-raising activities with occupiers to identify nature-related risks and opportunities to their operations.	Share insights from our own approach to nature and wider industry best practice, supporting awareness with occupiers via calls, meetings and learning lunches.

We will continue to engage in the development of sector-specific guidance on this topic and will incorporate learnings from pilot studies, such as those producing TNFD disclosures.

Conclusion

Nature – and the biodiversity and integrity of our ecosystems – not only needs better protecting but also restoring and enhancing. Globally, the real estate industry has huge impacts on nature, driving land-use change, habitat destruction and degradation, and pollution of ecosystems and the atmosphere. With this blueprint for addressing nature, we can begin to take responsibility for our contribution. We can consider the impacts we have on nature, both directly and indirectly, and the opportunities that are available to positively enhance nature, both on our properties and through value-chain activities.

The drivers for action are clear. The risks associated with inaction are being increasingly articulated, seen, understood, and their impacts felt around the world. This strategy lays the foundation for actions to be taken globally, across our real estate portfolio. We will utilise our control and influence to deliver on-site nature improvements, via management practices and the retrofit of NbS. We will work with our own suppliers, and wider upstream and downstream value chains to evaluate their respective impacts on nature and plan a transition to more nature-positive practices. The steps and interventions that will support these actions will be detailed in the supplementary design guide, to support site managers to put this blueprint into practice.

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This document has been written in collaboration with Greengage

Appendix A
Regulatory landscape

A.1 International

Kunming-Montreal Global Biodiversity Targets

The Kunming-Montreal Global Biodiversity Framework (K-MGBF), established at COP15, sets 23 targets aiming to halt and reverse biodiversity loss by the end of the decade (see Table A.1).[30]

Table A.1: Kunming-Montreal global targets for biodiversity

Target	Description
1	Effective management of land- and sea-use change, loss of highly important biodiverse areas close to zero by 2030
2	Effective restoration of 30% of degraded ecosystems by 2030
3	Effective conservation and management of 30% of land and 30% of oceans by 2030
4	Halt human-induced extinctions and maintain and restore genetic diversity
5	Sustainable use, harvesting and trade of wild species
6	Mitigate or eliminate the impacts of invasive alien species, reduce the rates of establishment of invasive species by 50% by 2030
7	Reduce pollution risks and impacts from all sources by 2030, reduce the overall risk from pesticides by half
8	Minimise the impacts of climate change and ocean acidification on biodiversity
9	Ensure sustainable use and management of wild species, while protecting customary use by indigenous peoples
10	Sustainable management of areas under agriculture, aquaculture, fisheries and forestry
11	Restore and enhance ecosystem function through nature-based solutions and ecosystem-based approaches
12	Increase the area and quality of urban green and blue spaces
13	Fair and equitable sharing of the benefits arising from the use of genetic resources
14	Integration of biodiversity into policies and development across all sectors
15	Enable businesses to monitor, assess and disclose their impacts on biodiversity
16	Encourage sustainable consumption, including reducing food waste by half by 2030
17	Strengthen capacity for biosafety measures and ensure benefits-sharing from biotechnology
18	Phase-out or reform harmful subsidies in a just way, reducing them by $500 billion by 2030
19	Substantially increase financial resources, mobilise $200 billion per year by 2030 from all sources, including $30 billion from developed to developing countries
20	Strengthen capacity-building and technology transfer
21	Integrated and participatory management, including the use of traditional knowledge
22	Equitable representation and participation of indigenous peoples and local communities
23	Ensure gender equality in the implementation of the framework

The inclusion of Target 15 within the K-MGBF was a watershed moment for nature, as delivering against it will require organisations to report and disclose in line with the TNFD's recommendations.

International Sustainability Standards Board (ISSB)

Though not yet established, the intention is for the ISSB to deliver a comprehensive global baseline of sustainability-related disclosure standards that provide investors and other capital market participants with information about companies' sustainability-related risks and opportunities to help them make informed decisions.[31] The ISSB has four key objectives:

- Developing standards for a global baseline of sustainability disclosures;
- Meeting the information needs of investors;
- Enabling companies to provide comprehensive sustainability information to global capital markets; and
- Facilitating interoperability with disclosures that are jurisdiction-specific and/or aimed at broader stakeholder groups.[32]

Global Reporting Initiative (GRI) Biodiversity Standard

To support reporting on matters that affect the economy, the environment, and society, organisations can draw on the GRI's standards. The GRI is comprised of a modular system of interconnected standards, which can support reporting across a range of sectors and specific topics (such as biodiversity) in a coherent and structured way.[33]

The Global Sustainability Standards Board identified the review of GRI Standard 304: Biodiversity 2016 as a priority project to support achievement of UN Sustainable Development Goals (SDGs) 14 (Life below water) and 15 (Life on land),[iii] and to meet the reporting obligations outlined in Target 15 of the K-MGBF.

Significant proposals, changes, and inclusions in the draft revision are outlined below:

- Facilitate reporting impacts across the value chain;
- Focus on the most significant impacts on biodiversity;
- Emphasis on providing location-specific information on impacts;
- New disclosure to report on the direct drivers of biodiversity loss (i.e. climate change, invasive alien species, land- and sea-use change, overexploitation of resources, pollution);
- New disclosure to report on the changes to the state of biodiversity (i.e. type, size, and condition of ecosystems affected or potentially affected);
- New requirements on the impacts on people resulting from an organisation's impacts on biodiversity, including:
  - Reporting if the organisation operates in proximity to areas of high biodiversity value that are important to indigenous peoples and local communities (Disclosure 304-1);
  - Reporting the significant ecosystem services and the beneficiaries of these ecosystem services that are or could be affected by the organisation or its suppliers (Disclosure 304- 77 4);
  - Managing these impacts, including how the organisation addresses the negative impacts of the transition to halt and reverse the loss of biodiversity on workers and local communities (Disclosure 304-6); and
  - Reporting how the organisation respects the provisions set out in the Nagoya Protocol to achieve the fair and equitable sharing of benefits arising from utilising genetic resources and the associated traditional knowledge (Disclosure 304-7).
- New biodiversity-specific management disclosures, including:
  - Application of the mitigation hierarchy;
  - Alignment with the K-MGBF.[34]

Taskforce on Nature-related Financial Disclosures (TNFD)

The latest TNFD Beta Framework v0.4 sets out the first international standard for alignment of financial sector activities with nature-related risk.[35] It was established in response to the growing appreciation of the need to factor nature into financial and business decisions.

The TNFD's sibling framework was established in 2021 by the Taskforce on Climate-related Financial Disclosures (TCFD). Disclosures in line with the TCFD's recommendations were mandated in the UK, and already apply to all of abrdn's UK pension funds.

The TNFD is a global, market-led initiative with the mission to develop and deliver a risk management and disclosure framework for organisations to report and act on evolving nature-related risks and opportunities, with the ultimate aim of supporting a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes.

It is developing and promoting the adoption of an integrated risk management and disclosure framework. The framework consists of three core components:

- An outline of fundamental concepts and definitions for understanding nature, to be used when assessing and disclosing nature-related risks and opportunities;

[iii] SDG 14 is devoted to "conserve and sustainably use the oceans, seas and marine resources". While SDG 15 is devoted to "protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss".

- A set of draft disclosure recommendations for risks and opportunities;
- Guidance to incorporate nature-related risk and opportunity assessment into current processes.

The overall aspiration of the TNFD is to encourage a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes, for the mutual benefit of people and the planet.

Sustainability Accounting Standards Board (SASB)

The SASB mirrors the Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) to provide information in a format that the financial community can use to understand ESG issues and make good, long-term investment decisions.[36]

SASB standards are focused on ESG issues that are likely to have material financial effects. In recent years, we've seen a concept emerge of double, dynamic, or nested materiality (reflected in the vernacular of the TCFD and TNFD), which guides the different levels of reporting that companies undertake. As a minimum, companies report on traditional information that is already reflected in their financial accounts, aligning with IASB and FASB standards.

Companies also report on the subset of sustainability topics that are material to the creation of enterprise value; this is where SASB standards lie.

The SASB framework is industry-specific and includes a matrix of potentially material factors for business leaders in 11 industries and 77 subsectors.

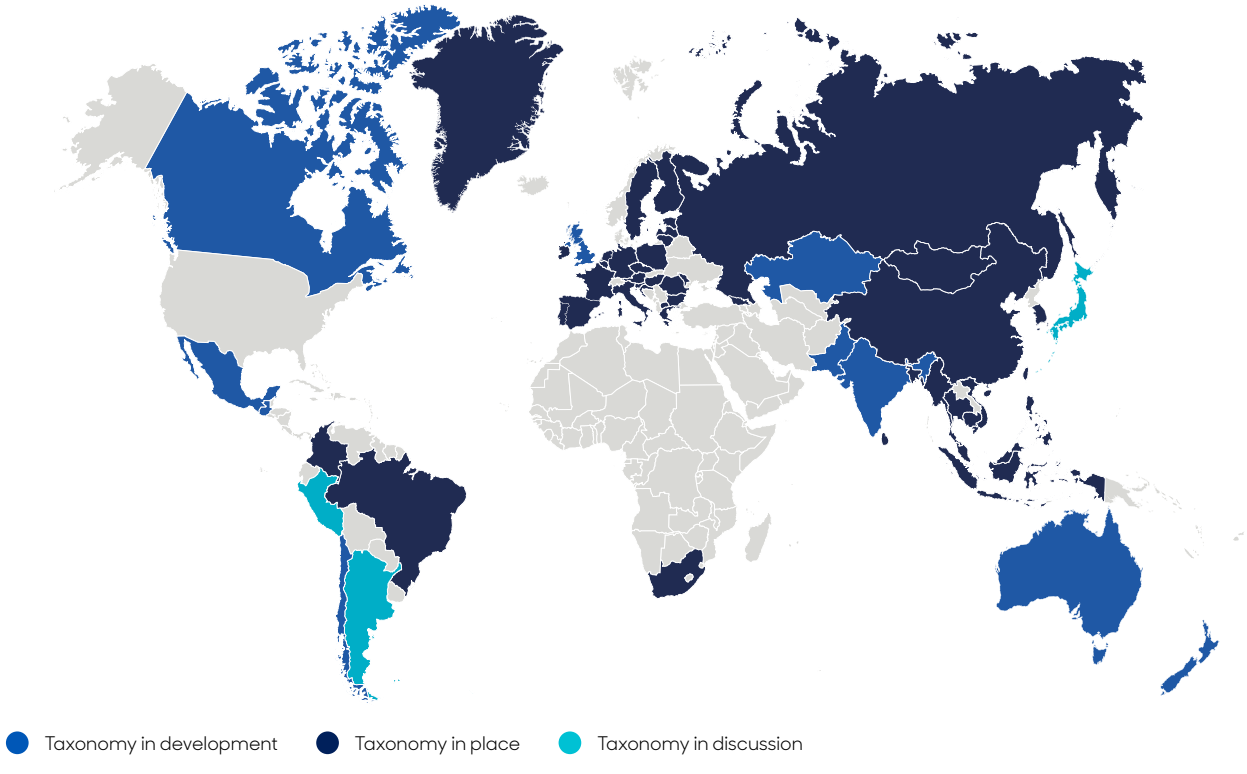
Green taxonomies

A number of taxonomies have been established and are emerging across the world (Figure A.1). The implications of the EU Taxonomy are of principal significance to abrdn, as it provides "companies, investors and policymakers with appropriate definitions for which economic activities can be considered environmentally sustainable".[37]

At present, the EU Taxonomy is only defined for two climate aspects: mitigation and adaptation. However, additional metrics for the following environmental aspects are planned:

- Sustainable use and protection of aquatic and marine resources;
- Transition to a circular economy;
- Pollution prevention and reduction;
- Protection and restoration of the biodiversity and ecosystem.[38]

Figure A.1: Global distribution of green taxonomies (GTAG and GFI, 2023: 8)



A.2 EU

Sustainable Finance Disclosure Regulation (SFDR)

The EU SFDR was adopted by the European Commission in April 2022 and establishes specific environmental criteria related to economic activities for investment purposes, and which forms part of the EU Action Plan on Sustainable Finance. The EU SFDR requires:

... specific firm-level disclosures from asset managers and investment advisers regarding how they address two key considerations: Sustainability Risks and Principal Adverse Impacts. With regards to asset managers, the EU SFDR also mandates transparency of remuneration policies in relation to the integration of sustainability risks.[39]

The overarching aim of the EU SFDR is to improve transparency in the market for sustainable investment products. As part of the EU SFDR, organisations need to report Principal Adverse Indicators (PAIs). At present, there are two mandatory indicators focusing on energy performance certificates and fossil fuel storage, though there are additional PAIs relating to waste, resource consumption, and biodiversity (Table A.2).

In October 2022, the UK Financial Conduct Authority (FCA) issued a consultation paper regarding UK Sustainability Disclosure Requirements (UK SDR).[40] At the time of writing the feedback has not been published.

Corporate Sustainability Reporting Directive (CSRD)

On 5 January 2023, the Corporate Sustainability Reporting Directive (CSRD) was established, which supplements the Non-Financial Reporting Directive (NFRD) in requiring companies to disclose climate-relevant information.[41] The CSRD expands the scope of the legislation to include all large companies, listed SMEs and EU subsidiaries of non-EU companies. Similarly, investors will have to disclose ESG-related information from investees. The CSRD also makes it mandatory for companies to have an audit of the sustainability information that they report.

Table A.2: EU SFDR's Principal Adverse Indicators

Adverse sustainability impact	Adverse sustainability impact	Metric (to be read together with definitions tab)
GHG emissions	18. GHG emissions	Scope 1 & 2 GHG emissions (Scope 3 from Jan 2023)
Energy consumption	19. Energy consumption intensity	Energy consumption in GWh per square meter
Waste	20. Waste production in operations	Share of assets not equipped with facilities for waste sorting or covered by a waste recovery or recycling contract
Resource consumption	21. Raw materials consumption for new construction and major renovations	Share of raw building materials (excluding recovered, recycled and biosourced) compared with the total weight of building materials used in new construction and major renovations
Biodiversity	22. Land artificialisation	Share of non-vegetated surface area (surfaces that have not been vegetated in ground, as well as on roofs, terraces and walls) compared with the total surface area of the plots of all assets

A.3 National

France

The Climate and Resilience Law of 22 August 2021 introduced a target of zero net 'artificialisation' by 2050 (see Table A.2 above) and, as an intermediate objective, halving the rate of land consumption by 2031. Implementing decrees are currently being adopted to included measures in line with these targets into regional planning and urban planning documents. There is also an obligation to install a renewable energy system or green roof on shopping malls with surface areas greater than 500m^2.

Article 29 of the Energy-Climate Law revises, clarifies and strengthens sustainability-related financial disclosures for market players. The implementing decree compliments overarching EU and international frameworks and regulations in three key areas:

- **Climate** - required disclosure of alignment strategies with regards to the temperature objectives of the Paris Agreement (quantitative greenhouse gas emission targets to be set every five years until 2050), as well as the share of Taxonomy-aligned assets (or balance-sheet) and finally the share of fossil fuels related activities;
- **Biodiversity** - required disclosure of alignment strategies with regards to international biodiversity preservation objectives (quantified target to be set);
- **ESG** - factors to be fully integrated in the risk management, governance and transition support systems (notably shareholder engagement) of financial actors.[42]

UK

As of H1 2024 (at the time of writing), the delivery of ≥10% Biodiversity Net Gain (BNG) will be mandated on all new developments in the UK, as the Environment Bill comes into effect. Local Planning Authorities will be able to set their own planning conditions or BNG requirements above the 10% minimum.

In January 2022, the UK Government mandated TCFD reporting FCA-regulated asset owners, managers, and pension providers. As of April 2022, >1,300 of the largest UK-registered comp anies and financial institutions were mandated to disclose in line with TCFD recommendations.

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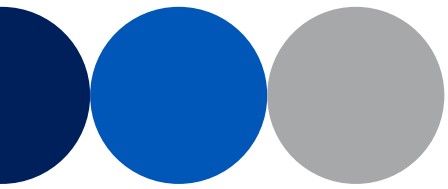

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